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Investigation of the joint operation of electric transmission lines with a new type concrete reinforced concrete foundation

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Abstract

© Published under licence by IOP Publishing Ltd. The aim of this work was to study the joint work of structural systems "steel bearing overhead power transmission lines 10 kV - prefabricated concrete Foundation of a new type [1] - ground". For this purpose the technique of computer simulation in a PC "ANSYS" of the system. The method takes into account the spatial work of designs and physical nonlinearity of materials from which they are made. In addition, for steel was used in the theory of Mises, for concrete - Williams-Warnake, for ground - Drucker-Prager. In addition, all the necessary geometric, strength and physical characteristics of the model were obtained on the basis of the existing construction Standards for the design. The analysis of stress shows that its strength, stiffness and stability is provided, and there are reserves: for the metal supports - up to 15% to the base - 30%, ground - 1%.Therefore, further studies should consider the optimization problem for the choice of an effective constructive solution of the support and Foundation (with clarification on how to calculate them), that may be grounds to apply for a patent or utility model. Based on the obtained results it is recommended that a new type of collapsible foundations to apply in the real world.

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